UEFI BIOS Setup 1

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UEFI BIOS Setup

Introduction

The purpose of this manual is to describe the settings in the AMI UEFI BIOS Setup program on this motherboard. The Setup program allows users to modify the basic system configuration and save these settings to NVRAM.

UEFI BIOS determines what a computer can do without accessing programs from a disk. This system controls most of the input and output devices such as keyboard, mouse, serial ports and disk drives. BIOS activates at the first stage of the booting process, loading and executing the operating system. Some additional features, such as virus and password protection or chipset fine-tuning options are also included in UEFI BIOS.

The rest of this manual will to guide you through the options and settings in UEFI BIOS Setup.

Plug and Play Support

This AMI UEFI BIOS supports the Plug and Play Version 1.0A specification.

EPA Green PC Support

This AMI UEFI BIOS supports Version 1.03 of the EPA Green PC specification.

ACPI Support

AMI ACPI UEFI BIOS support Version 1.0/2.0 of Advanced Configuration and Power interface specification (ACPI). It provides ASL code for power management and device configuration capabilities as defined in the ACPI specification, developed by Microsoft, Intel and Toshiba.

PCI Bus Support

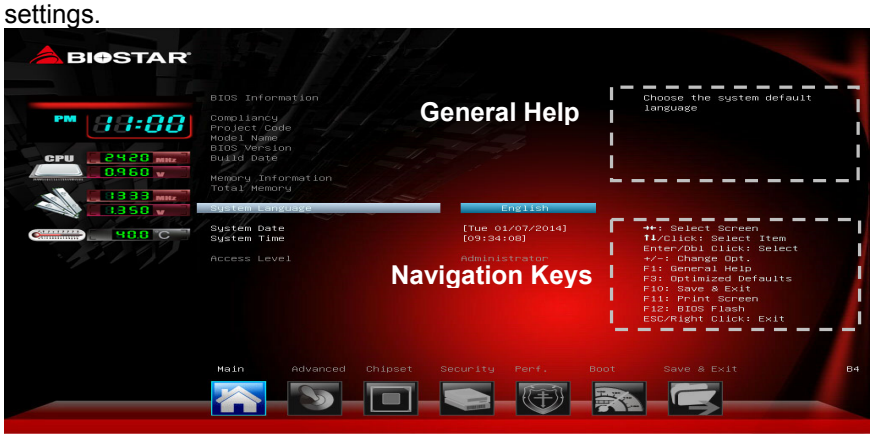
This AMI UEFI BIOS also supports Version 2.3 of the Intel PCI (Peripheral Component Interconnect) local bus specification.

DRAM Support

DDR3L SO-DRAM (Double Data Rate III Synchronous DRAM) is supported.

Using Setup

When starting up the computer, press **<Del>** during the **Power-On Self-Test (POST)** to enter the UEFI BIOS setup utility.
In the UEFI BIOS setup utility, you will see **General Help** description at the top right corner, and this is providing a brief description of the selected item. **Navigation Keys** for that particular menu are at the bottom right corner, and you can use these keys to select item and change the settings.

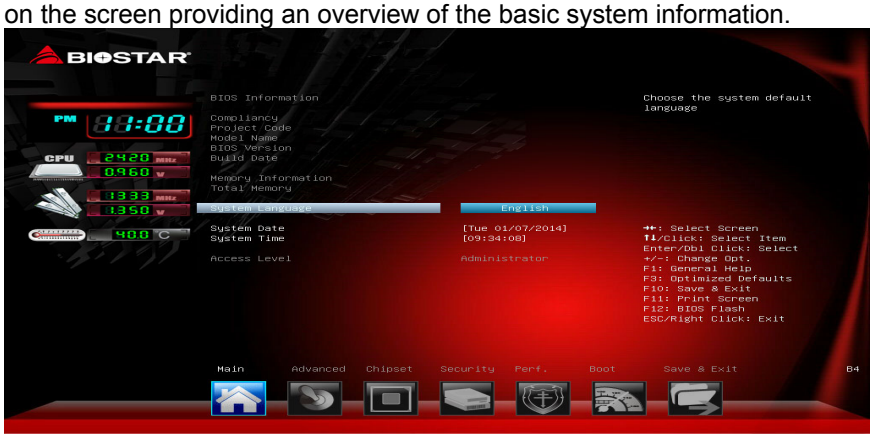


Notice

- The default UEFI BIOS settings apply for most conditions to ensure optimum performance of the motherboard. If the system becomes unstable after changing any settings, please load the default settings to ensure system's compatibility and stability. Use Load Setup Default under the Exit Menu.
- For better system performance, the UEFI BIOS firmware is being continuously updated. The UEFI BIOS information described in this manual is for your reference only. The actual UEFI BIOS information and settings on board may be slightly different from this manual.
- The content of this manual is subject to be changed without notice. We will not be responsible for any mistakes found in this user's manual and any system damage that may be caused by wrong-settings.

1 Main Menu

Once you enter AMI UEFI BIOS Setup Utility, the Main Menu will appear on the screen providing an overview of the basic system information.



BIOS Information

It shows system information including UEFI BIOS version, Project Code, Model Name, Build Date and etc.

Total Memory

Shows system memory size, VGA shard memory will be excluded.

System Language

Choose the system default language.

System Date

Set the system date. Note that the 'Day' automatically changes when you set the date.

System Time

Set the system internal clock.

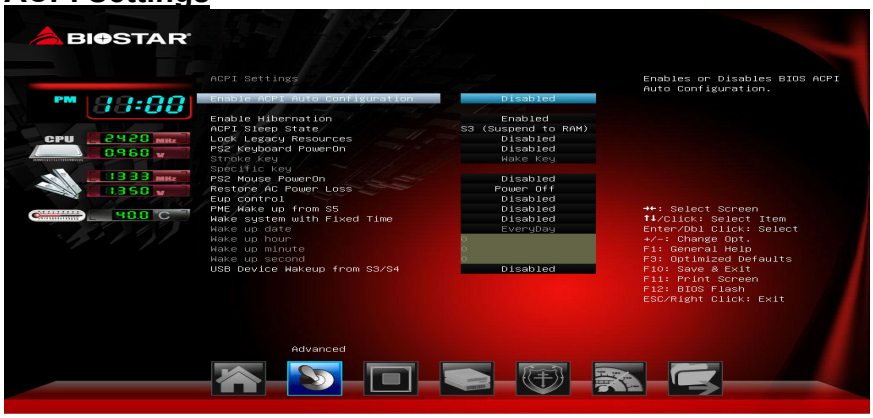
2 Advanced Menu

The Advanced Menu allows you to configure the settings of CPU, Super I/O, Power Management, and other system devices.

Notice

Beware of that setting inappropriate values in items of this menu may cause system to malfunction.

ACPI Settings



Enable ACPI Auto Configuration

This item enables or disables BIOS ACPI Auto Configuration.

Options: Disabled (Default) / Enabled

Enable Hibernation

This item enables or disables system ability to hibernate (OS/S4 Sleep State). This option may be not effective with some OSes.
Options: Enabled (Default) / Disabled

ACPI Sleep State

This item selects the highest ACPI sleep state the system will enter when the SUSPEND button is pressed.
Options: S3 only (Suspend to RAM) (Default) / Suspend Disabled

Lock Legacy Resources

The item enables or disables Lock of Legacy Resources.
Options: Disabled (Default) / Enabled

Ring-In Wake up from S5

This item enables the system to wake from S5 using Ring-In event.
Options: Disabled (Default) / Enabled

PS2 Keyboard PowerOn

This item allows you to control the keyboard power on function.
Options: Disabled (Default) / Any Key / Stroke Key / Specific Key

Stroke Keys

This item will show only when Keyboard PowerOn is set “Stroke Key.”
Options: Wake Key (Default) / Power Key / Ctrl+F1 / Ctrl+F2 / Ctrl+F3 / Ctrl +F4 / Ctrl+F5 / Ctrl+F6

Specific Key

This item will show only when Keyboard PowerOn is set “Specific Key.” Press Enter to set Specific key.

PS2 Mouse PowerOn

This item allows you to control the mouse power on function.
Options: Disabled (Default) / Enabled

Restore AC Power Loss

Specify what state to go to when power is re-applied after a power failure.
Options: Power Off (Default) / Power On / Last State

EuP Control

When EuP is enabled, the system will meet EuP requirement.
Options: Disabled (Default) / Enabled

PME Wake up from S5

The item enables the system to wake from S5 using PME event.
Options: Disabled (Default) / Enabled

Wake system with Fixed Time

This item enables or disables the system to wake on by alarm event. When this item is enabled, the system will wake on the hr::min::sec specified.

Options: Disabled (Default) / Enabled

Wake up date

You can choose which date the system will boot up.

Wake up hour / Wake up minute / Wake up second

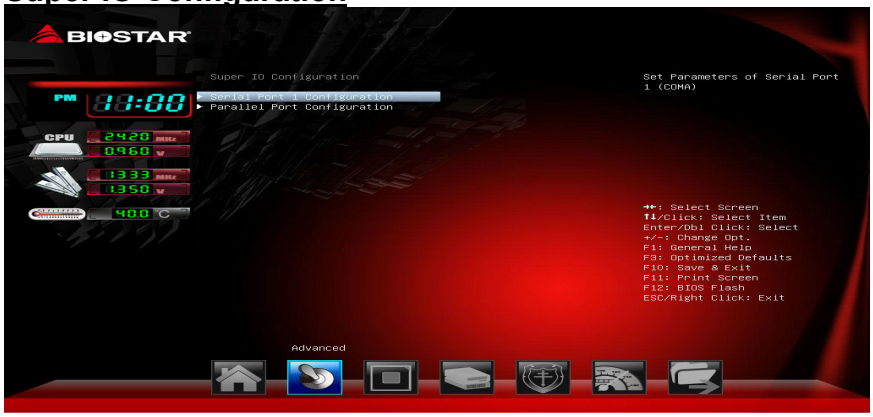
You can choose the system boot up time, input hour, minute and second to specify.

USB Device Wakeup from S3/S4

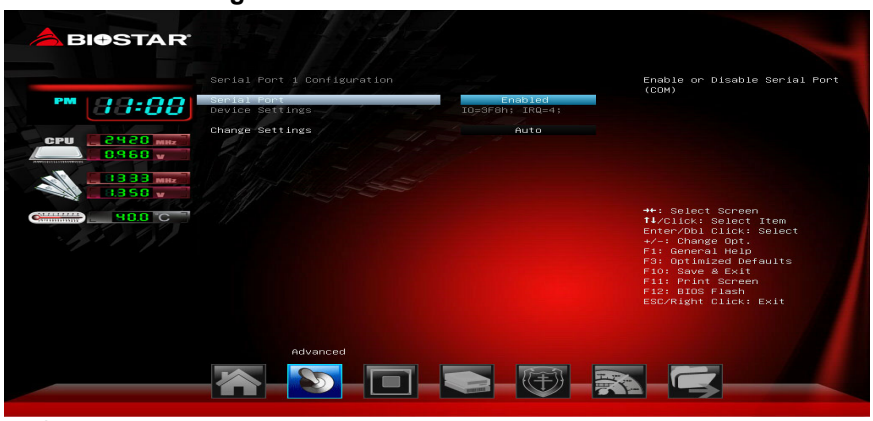
This item allows you to enable or disabled the USB resume from S3/S4 function.

Options: Disabled (Default) / Enabled

Super IO Configuration



Serial Port 1 Configuration



Serial Port

This item enables or disables Serial Port (COM).

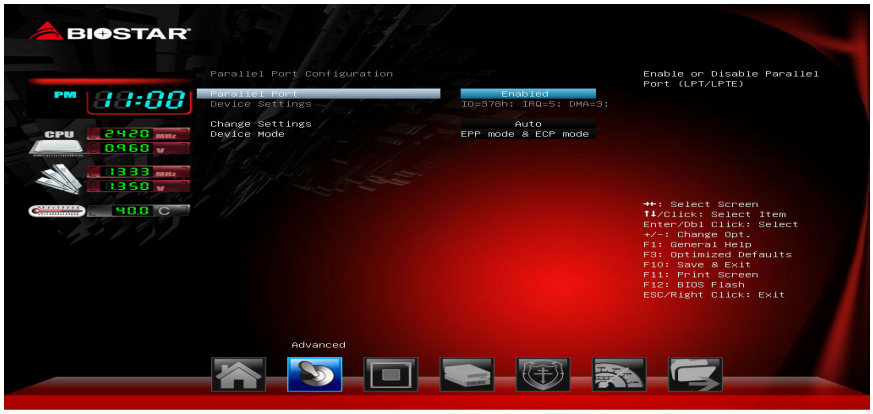
Options: Enabled (Default) / Disabled

Change Settings

This item selects an optimal setting for Super IO device.

Options: Auto (Default) / IO=3F8h; IRQ=4 / IO=3F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12 / IO=2F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12 / IO=3E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12 / IO=2E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12

Parallel Port Configuration



Parallel Port

This item enables or disables Parallel Port (LPT/LPTE).

Options: Enabled (Default) / Disabled

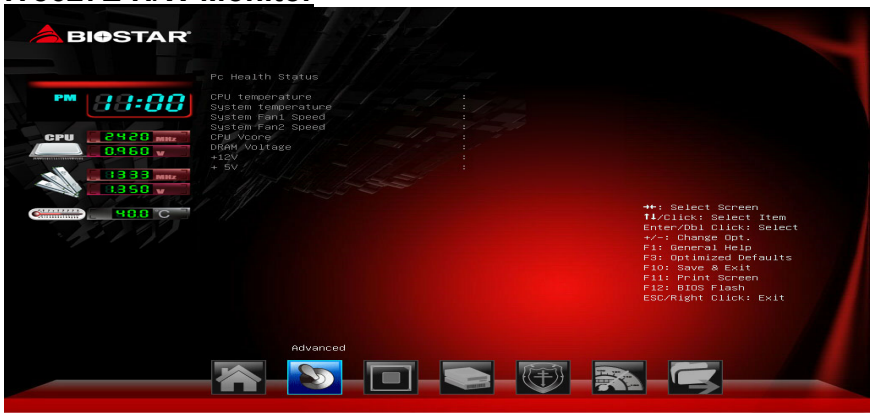
Change Settings

This item allows you to select an optimal setting for Super IO device.
Options: Auto (Default) / IO=378h; IRQ=5; DMA=3 / IO=378h; IRQ=5, 6, 7, 9, 10, 11, 12; DMA=1,3 / IO=278h; IRQ=5, 6, 7, 9, 10, 11, 12; DMA=1,3 / IO=3BCh; IRQ=5, 6, 7, 9, 10, 11, 12; DMA=1,3

Device Mode

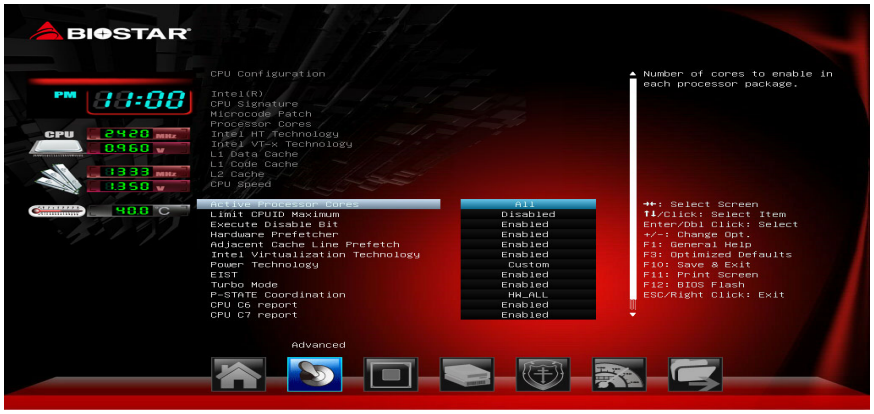
This item allows you to change the Printer Port mode.
Options: EPP mode & ECP mode (Default) / Standard Parallet Port mode(SPP) / EPP mode / ECP mode

IT8627E H/W Monitor



CPU Configuration

This item shows CPU Information



Active Processor Cores

This item sets number of cores to enable in each processor package.
Options: All (Default) / 1

Limit CPUID Maximum

Disabled for Windows XP
Options: Disabled (Default) / Enabled

Execute-Disable Bit

XD can prevent certain classes of malicious buffer overflow attacks when combined with a supporting OS (Windows Server 2003 SP1, Windows XP SP2, SuSE Linux 9.2, RedHat Enterprise 3 Update 3.).
Options: Enabled (Default) / Disabled

Hardware Prefetcher

This item enables or disables the Mid Level Cache (L2) streamer Prefetcher.
Options: Enabled (Default) / Disabled

Adjacent Cache Line Prefetch

This item enables or disables the Mid Level Cache (L2) prefetching of adjacent cache lines.
Options: Enabled (Default) / Disabled

Intel Virtualization Technology

When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology
Options: Enabled (Default) / Disabled

Power Technology

This item enables or disables the power management features.
Options: Custom (Default) / Energy Efficient / Disable

EIST

This item enables or disables Intel SpeedStep.
Options: Enabled (Default) / Disabled

Turbo Mode

This item enables or disables Turbo Mode.
Options: Enabled (Default) / Disabled

P-STATE Coordination

This item changes P-STATE coordination type.
Options: HW_ALL (Default) / SW_ALL / SW_ANY

CPU C6 report

This item enables or disables CPU C6 (ACPI C3) report to OS.
Options: Enabled (Default) / Disabled

CPU C7 report

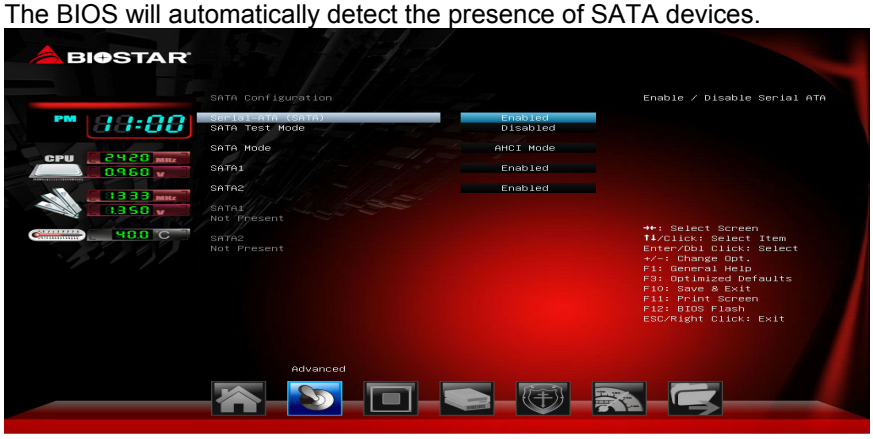
This item enables or disables CPU C7 (ACPI C3) report to OS.
Options: Enabled (Default) / Disabled

Package C State limit

This item sets Package C State limit.
Options: No Limit (Default) / C0 / C1 / C3 / C6 / C7

SATA Configuration

The BIOS will automatically detect the presence of SATA devices.



Serial-ATA (SATA)

This item enables/disables Serial ATA Device.
Options: Enabled (Default) / Disabled

SATA Test Mode

This item enables/disables test mode.
Options: Disabled (Default) / Enabled

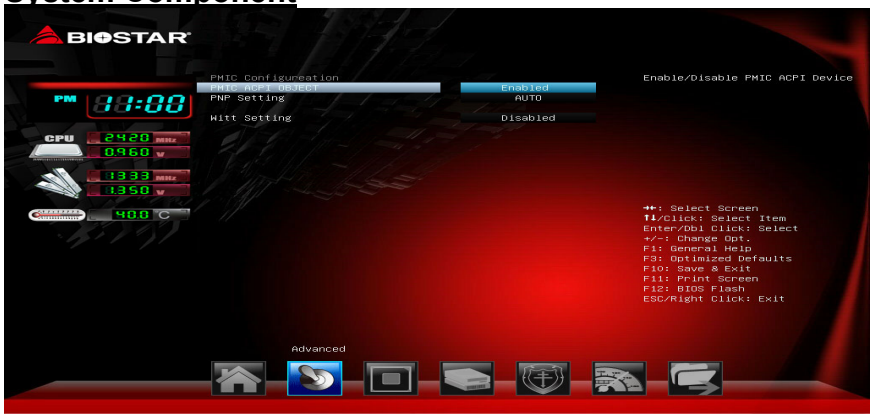
SATA Mode

This item determines how SATA controller(s) operate.
Options: AHCI Mode (Default) / IDE Mode

SATA1/2

This item enables/disables Serial ATA Port1/2.
Options: Enabled (Default) / Disabled

System Component



PMIC ACPI OBJECT

This item enables/disables PMIC ACPI Device.
Options: Enabled (Default) / Disabled

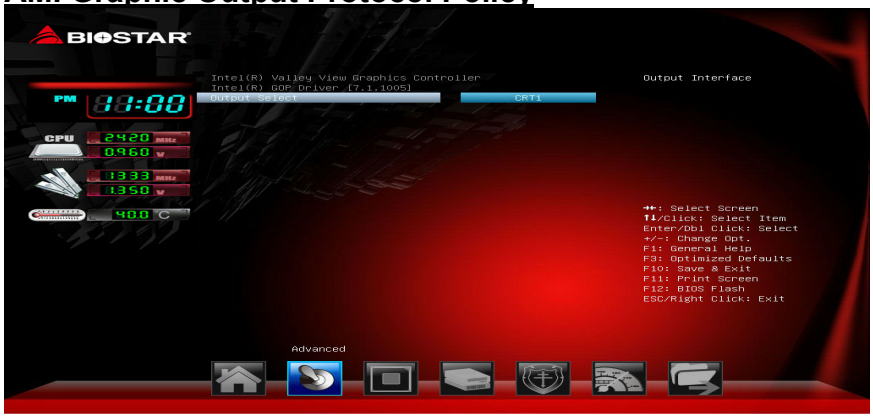
PNP Setting

This item selects PNP setting mode, Disable, Performance, Power or Power & Performance mode.
Options: AUTO (Default) / Disabled / AX STEPPING / BX STEPPING

Witt Setting

It sets Test Device connected to I2C and URT for WHCK test.
Options: Disabled (Default) / Enabled

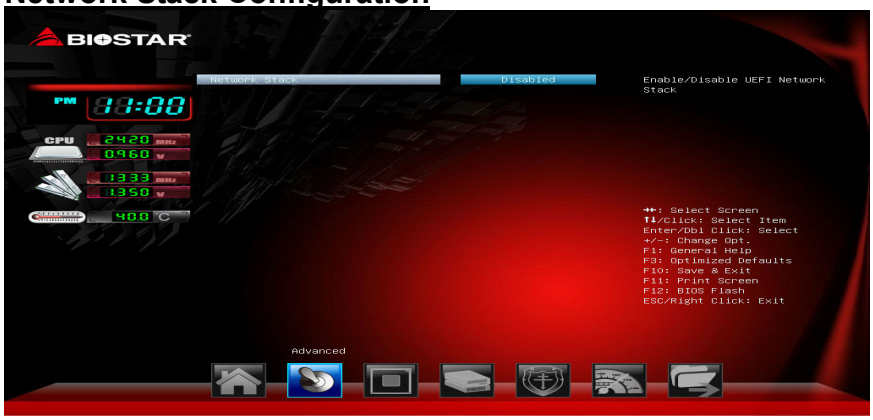
AMI Graphic Output Protocol Policy



Output Select

This item selects output interface in BIOS mode.

Network Stack Configuration



Network Stack

This item enables or disables UEFI network stack

Options: Disabled (Default) / Enabled

*Note: The following items appear only when you set the **Network Stack** function to [Enabled]*

IPv4 PXE Support

This item enables or disables IPv4 PXE Boot Support. If disabled IPv4 booth option will not be created.

Options: Enabled (Default) / Disabled

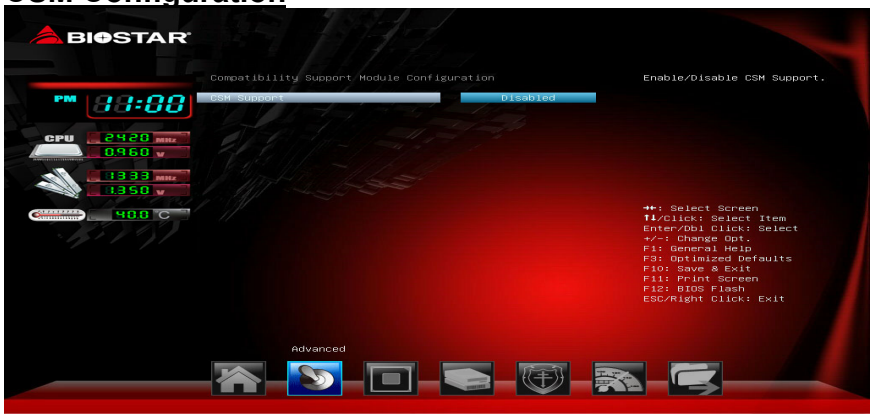
IPv6 PXE Support

This item enables or disables IPv6 PXE Boot Support. If disabled IPv6 booth option will not be created.
Options: Enabled (Default) / Disabled

PXE boot wait time

Wait time to press ESC key to abort the PXE boot.

CSM Configuration



CSM Support

This item enables or disables CSM Support
Options: Disabled (Default) / Enabled

*Note: The following items appear only when you set the **CSM Support** function to [Enabled]*

GateA20 Active

Upon Request – FA20 can be disabled using BIOS services. Always – do not allow disabling GA20; this option is useful when any RT code is executed above 1MB
Options: Upon Request (Default) / Always

Option ROM Messages

This item sets the display mode for option ROM.
Options: Force BIOS (Default) / Keep Current

INT19 Trap Response

BIOS reaction on INT19 trapping by Option ROM: IMMEDIATE – execute the trap right away; POSTPONED – execute the trap during legacy boot.
Options: Postponed (Default) / Immediate

Boot option filter

This option controls what devices system can boot to.
Options: Legacy only (Default) / UEFI and Legacy / UEFI only

Network

This item controls the execution of UEFI and Legacy PXE OpROM
Options: Legacy only (Default) / Do not launch / UEFI only / Legacy first / UEFI first

Storage

This item controls the execution of UEFI and Legacy Storage OpROM
Options: Legacy only (Default) / Do not launch / UEFI only / Legacy first / UEFI first

Video

This item controls the execution of UEFI and Legacy Video OpROM
Options: Legacy only (Default) / Do not launch / UEFI only / Legacy first / UEFI first

Other PCI device

It determines OpROM execution policy for devices other than Network, Storage, or video.
Options: UEFI first (Default) / Legacy only

USB Configuration

Legacy USB Support

The item allows you to enable Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.
Options: Enabled (Default) / Disabled / Auto

USB3.0 Support
The item enables/disables USB3.0 (XHCI) controller support.
Options: Enabled (Default) / Disabled

XHCI Hand-off

This is workaround for OSes without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.
Options: Enabled (Default) / Disabled

EHCI Hand-off

This is workaround for OSes without EHCI hand-off support. The EHCI ownership change should be claimed by EHCI driver.
Options: Disabled (Default) / Enabled

USB Mass Storage Driver Support

The item allows you to enable or disable USB Mass Storage Driver Support.
Options: Enabled (Default) / Disabled

USB transfer time-out

The time-out value for Control, Bulk, and Interrupt transfers.
Options: 20 sec (Default) / 1 sec / 5 sec / 10 sec

Device reset time-out

The item sets USB mass storage device Start Unit command time-out.
Options: 20 sec (Default) / 10 sec / 30 sec / 40 sec

Device power-up delay

"Auto" uses default value: for a Root port it is 100ms, for a Hub port the delay is taken from Hub descriptor.
Options: Auto (Default) / Manual

*Note: The following items appear only when you set the **Device power-up delay** function to [Manual]*

Device power-up delay in seconds

Delay range is 1 ~ 40 seconds, in one second increments.
Options: 5 (Default)

Realtek PCIe GBE Family Controller

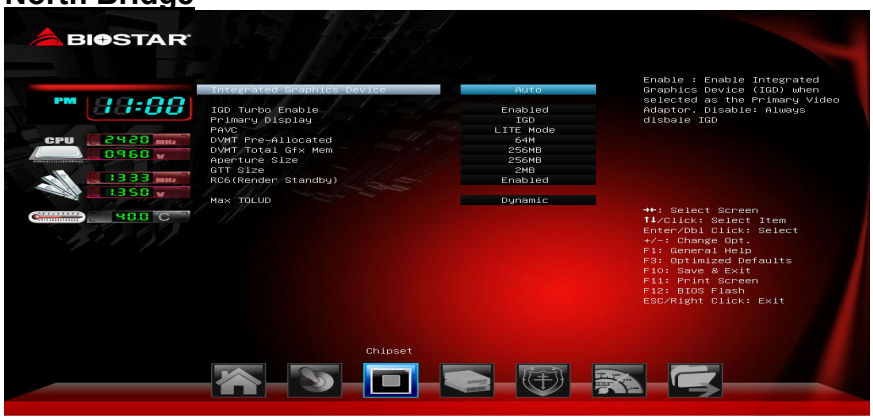
3 Chipset Menu

This section describes configuring the PCI bus system. PCI, or Personal Computer Interconnect, is a system which allows I/O devices to operate at speeds nearing the speed of the CPU itself uses when communicating with its own special components.

Notice

Beware of that setting inappropriate values in items of this menu may cause system to malfunction.

North Bridge



Integrated Graphics Device

Enable: Enable Integrated Graphics Device (IGD) when selected as the Primary Video Adaptor. Disable: Always disable IGD.
Options: Auto (Default) / Disabled

IGD Turbo Enable

Enable: IGD Turbo Enable. Disable: IGD Turbo Disable.
Options: Enabled (Default) / Disabled

Primary Display

This item selects which of IGD/PCI Graphics device should be Primary Display.
Options: IGD (Default) / PCI

PAVC

This item enables/disables Protected Audio Video Control.
Options: LITE Mode (Default) / Disabled / SERPENT Mode

DVMT Pre-Allocated

This item selects DVMT 5.0 Pre-Allocated (Fixed) Graphics Memory size used by the Internal Graphics Device.
Options: 64M (Default) / 96M / 128M / 160M / 192M / 224M / 256M / 288M / 320M / 352M / 384M / 416M / 448M / 480M / 512M

DVMT Total Gfx Mem

This item selects DVMT5.0 Total Graphic Memory size used by the Internal Graphics Device.
Options: 256MB (Default) / 128MB / MAX

Aperture Size

This item selects the Aperature Size.
Options: 256MB (Default) / 128MB / 512MB

GTT Size

This item selects the GTT Size.
Options: 2MB (Default) / 1MB

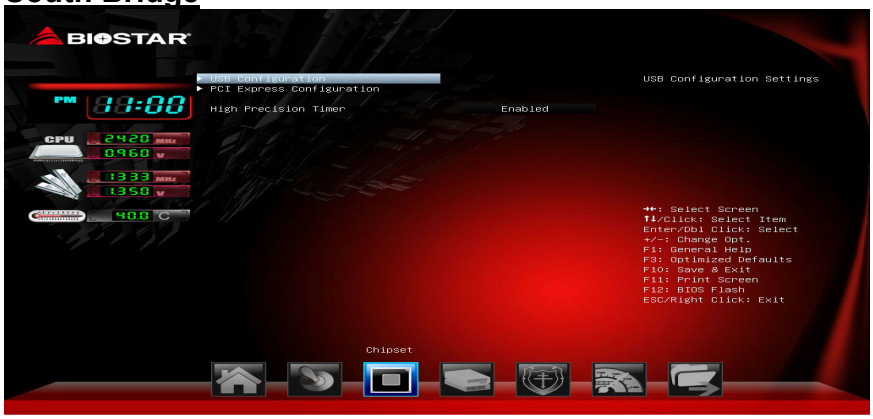
RC6 (Render Standby)

This item enables or disables render standby support.
Options: Enabled (Default) / Disabled

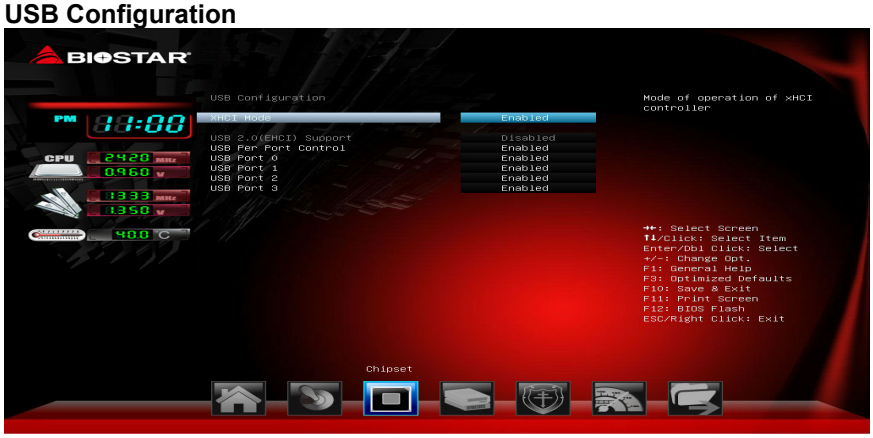
Max TOLUD

Maximum Value of TOLUD
Options: Dynamic (Default) / 1 GB / 1.25 GB / 1.5 GB / 1.75 GB / 2 GB / 2.25 GB / 2.5 GB / 2.75 GB / 3 GB

South Bridge



USB Configuration



XHCI Mode

This item enables or disables mode of operation of xHCI controller.
Options: Enabled (Default) / Disabled

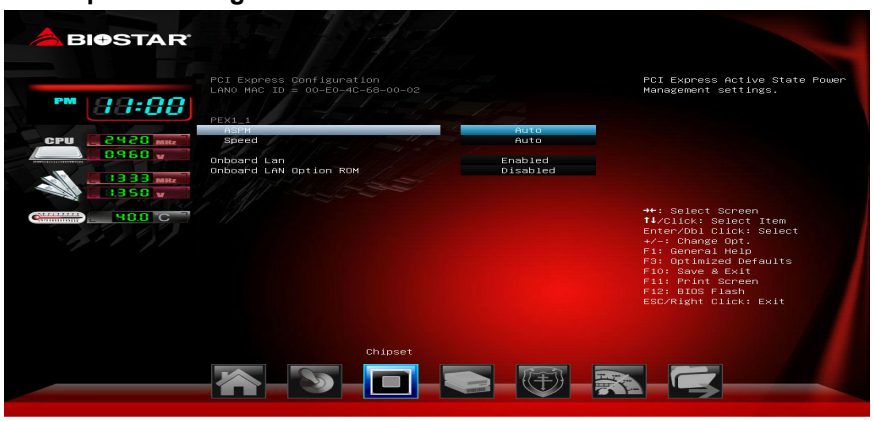
USB Per Port Controller

This item controls each of the USB ports(0-3). Enable: Enable USB per port; Disable: Use USB port x setting.
Options: Enabled (Default) / Disabled

USB Port 0/1/2/3

This item enables/disables USB port 0/1/2/3
Options: Enabled (Default) / Disabled

PCI Express Configuration



ASPM

This item sets PCI Express Active State Power Management settings.
Options: Auto (Default) / L0s / L1 / L0sL1 / Disabled

Speed

This item selects PCI Express port speed.
Options: Auto (Default) / Gen1 / Gen2

Onboard Lan

This item enables/disables the PCI Express Port 2 in the Chipset.
Options: Enabled (Default) / Disabled

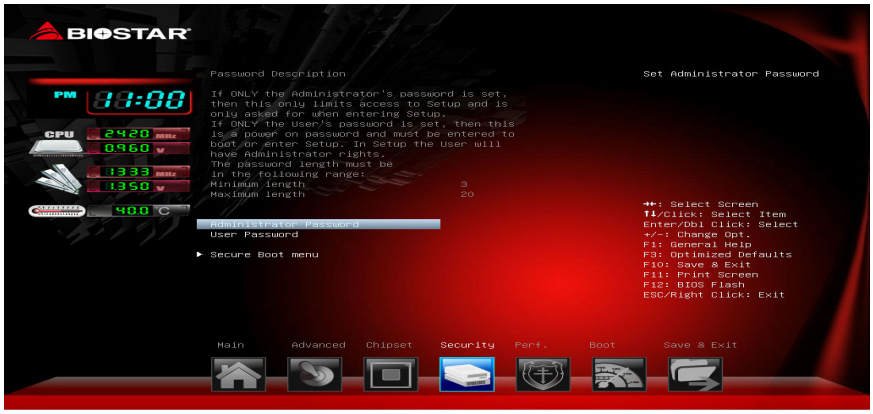
Onboard LAN Option ROM

This item enables/disables Onboard LAN Option ROM.
Options: Disabled (Default) / Enabled

High Precision Timer

This item enables/disables the High Precision Event Timer.
Options: Enabled (Default) / Disabled

4 Security Menu


BIOSTAR
Password Description
If ONLY the Administrator's password is set, then this only limits access to Setup and is only asked for when entering Setup.
If ONLY the User's password is set, then this is a power on password and must be entered to boot or enter Setup. In Setup the User will have Administrator rights.
The password length must be in the following range:
Minimum length 3
Maximum length 20
Administrator Password
User Password
Secure Boot menu
Set Administrator Password
→←: Select Screen
↑↓/Click: Select Item
Enter/Dbl Click: Select
+/-: Change Opt.
F1: General Help
F3: Optimized Defaults
F10: Save & Exit
F11: Print Screen
F12: BIOS Flash
ESC/Right Click: Exit
Main
Advanced
Chipset
Security
Perf.
Boot
Save & Exit

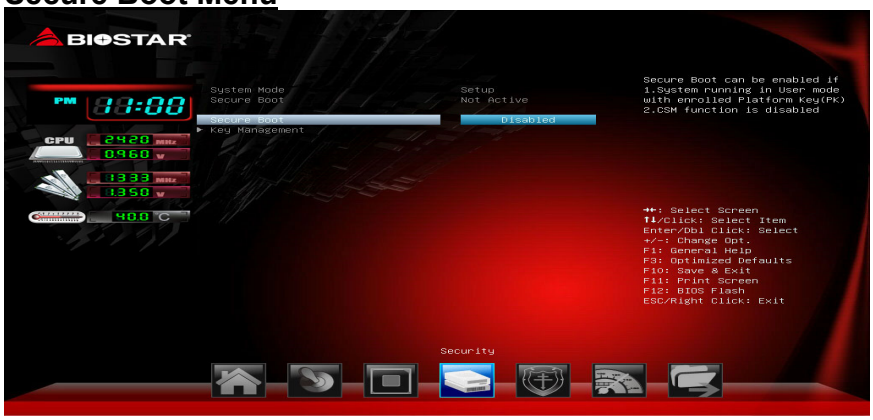
Administrator Password

This item sets Administrator Password.

User Password

This item sets User Password.

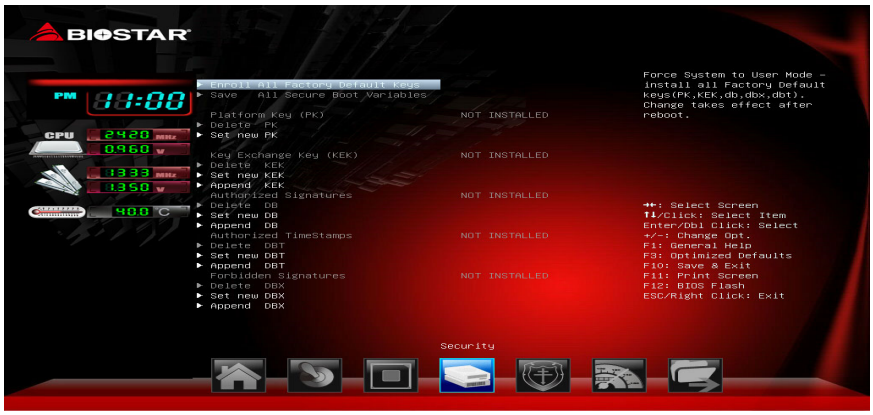
Secure Boot Menu



Secure Boot

Secure Boot flow control. Secure Boot can be enabled only when 1. Platform Key (PK) is enrolled and Platform is operating in user mode and 2.CSM function is disabled in Setup.
Options: Disabled (Default) / Enabled

Key Management



Enroll All Factory Default Keys

Forces system to user Mode – Install all Factory Default keys (PK, KEK, dbx, dbt). Change takes effect after boot.

Platform Key (PK)

Delete PK – Allows you to delete the PK file from your system.

Set new PK – Allows you set new PK file.

Key Exchange Key Database (KEK)

Delete KEK – Allows you to delete the KEK file from your system.

Set new KEK – Allows you set new KEK file.

Append Var to KEK – Allows you append Var to KEK.

Authorized Signature Database (DB)

Delete DB – Allows you to delete the DB file from your system.

Set new DB – Allows you set new DB file.

Append Var to DB – Allows you append Var to DB.

Authorized TimeStamps (DBT)

Delete DB – Allows you to delete the DBT file from your system.

Set new DB – Allows you set new DBT file.

Append Var to DB – Allows you append Var to DBT.

Forbidden Signature Database (DBX)

Delete DBX – Allows you to delete the DBX file from your system.

Set new DBX – Allows you set new DBK file.

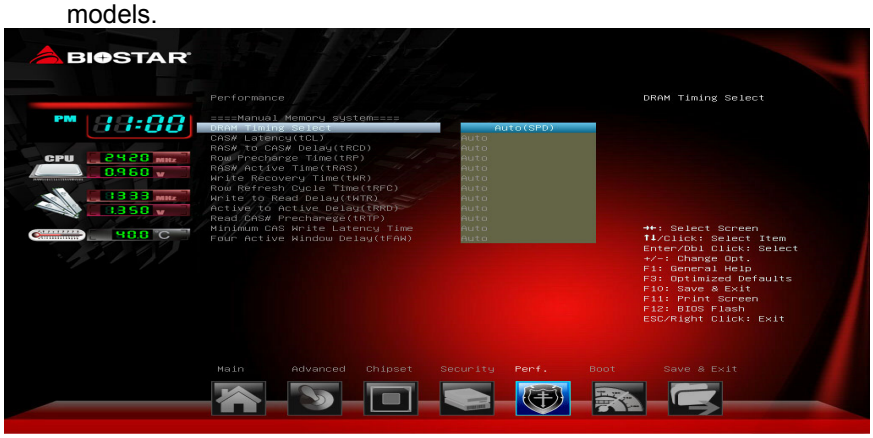
Append Var to DBX – Allows you append Var to DBX.

5 Performance Menu

This submenu allows you to change voltage and clock of various devices. (However, we suggest you use the default setting. Changing the voltage and clock improperly may damage the device.)

Notice

- Beware of that setting inappropriate values in items of this menu may cause system to malfunction.
- The options and default settings might be different by RAM or CPU models.



DRAM Timing Select

This item sets DRAM Timing Select.
Options: Auto (SPD) (Default) / Manual

Note: *The following items appear only when you set the* ***DRAM Timing Select*** *function to* ***[Manual]***

CAS# Latency (tCL)

This item allows you to select CAS Latency, Range 4-24
Options: Auto (Default)

RAS# to CAS# Delay (tRCD)

This item allows you to select Row Address to Column Address Delay, Range 3-20
Options: Auto (Default)

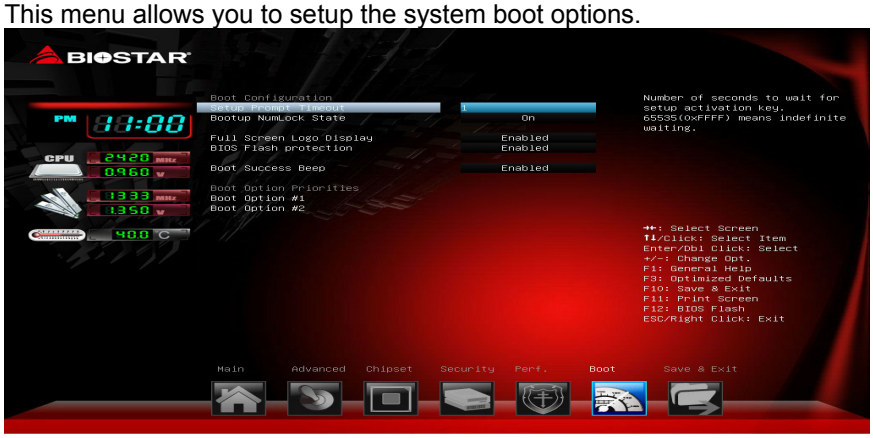
Row Precharge Time (tRP)

This item allows you to select Row Precharge Time, Range 3-15
Options: Auto (Default)

RAS# Active Time (tRAS)
This item allows you to select Row Active Time, Range 9-63
Options: Auto (Default)
Write Recovery Time (tWR)
This item allows you to select Internal Write to Read Command Delay, Range 5-16
Options: Auto (Default)
Row Refresh Cycle Time (tRFC)
This item allows you to select Minimum Refresh Recovery Time, Range 1-511
Options: Auto (Default)
Write to Read Delay (tWTR)
This item allows you to select Internal Write to Read Command Delay, Range 3-31
Options: Auto (Default)
Active to Active Delay (tRRD)
This item allows you to select Row Active to Row Active Delay, Range 4-15
Options: Auto (Default)
Read CAS# Precharge (tRTP)
This item allows you to select Read to Precharge Delay, Range 4-15
Options: Auto (Default)
Minimum CAS Write Latency Time
This item allows you to select Minimum CAS Write Latency Range, Range 5-12
Options: Auto (Default)
Four Active Window Delay (tFAW)
This item allows you to select Four Active Window Delay, Range 10-63
Options: Auto (Default)

6 Boot Menu

This menu allows you to setup the system boot options.



Setup Prompt Timeout

This item sets number of seconds to wait for setup activation key.
Options: 1 (Default)

Bootup NumLock State

This item selects the keyboard NumLock state.
Options: On (Default) / Off

Full Screen Logo Display

This item allows you to enable/disable Full Screen Logo Show function.
Options: Enabled (Default) / Disabled

BIOS Flash protection

While enabled, it can't flash write and flash erase by SMI.
Options: Enabled (Default) / Disabled

Boot Success Beep

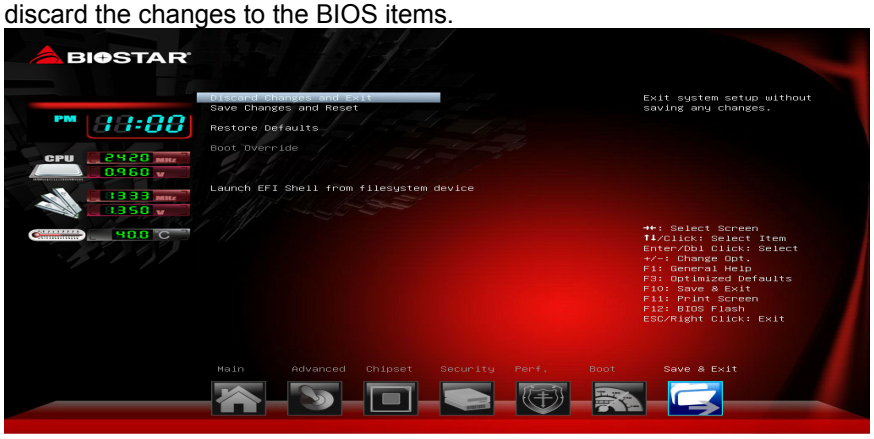
When this item is set to Enabled, BIOS will let user know boot success with beep.
Options: Enabled (Default) / Disabled

Boot Option Priorities

The items specify the boot device priority sequence from the available devices. The number of device items that appears on the screen depends on the number of devices installed in the system.

7 Exit Menu

This menu allows you to load the optimal default settings, and save or discard the changes to the BIOS items.



Discard Changes and Exit

Abandon all changes made during the current session and exit setup.

Save Changes and Reset

Reset the system after saving the changes.

Restore Defaults

This selection allows you to reload the BIOS when problem occurs during system booting sequence. These configurations are factory settings optimized for this system.

Launch EFI Shell from filesystem device

This item attempts to EFI Shell application (Shellx64.efi) from one of the available filesystem devices.